

Capito, Bonnie P CIV NAVFAC Lant

From: Jackson, Rodger W CIV NAVFAC Lant
Sent: Wednesday, July 27, 2005 7:13 AM
To: Capito, Bonnie P CIV NAVFAC Lant
Subject: FW: OU1 BERA - Comments to the Navy Responses to USEPA/NCDENR Comments

CH PT AR

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-----Original Message-----

From: Daniel.Lavoie@CH2M.com [mailto:Daniel.Lavoie@CH2M.com]
Sent: Tuesday, July 26, 2005 15:44
To: George.Lane@ncmail.net
Cc: Jackson, Rodger W CIV NAVFAC Lant; david.lilley@ncmail.net; Townsend.Gena@epamail.epa.gov; sandy.mort@ncmail.net; jstump@GFNET.com; Corl, William E CIV NAVFAC Lant; jeffrey.christopher@usmc.mil; Doug.Bitterman@CH2M.com; Julianne.Schucker@CH2M.com; Jonathon.Weier@CH2M.com; William.Friedmann@CH2M.com; Kathryn.Tippin@CH2M.com
Subject: RE: OU1 BERA - Comments to the Navy Responses to USEPA/NCDENR Comments

George,

We have considered Dave Lilley's Comments related to Navy's response-to-comments (RTCs) for the OU1 BERA. This email correspondence is intended to be the Navy's official response to these additional comments.

First, we need to call out a minor clarification/correction. In Navy's RTCs for David Lilley's comment #2, the NOAEL of 26.3 mg/kg/d was incorrectly cited as a TRV for "lead". Instead, it should have been stated that it is a TRV for "chromium". We apologize for the inaccuracy. As it turns out, that particular chromium TRV was never selected for use in the BERA food web models and was only included in Table E-10 of initial review version of the BERA, because it was incorrectly retained in Table E-10 when it was sent for review. However, it is relevant to Dave Lilley's comments here regarding uncertainty factors (UF) and his request for a justification of their use in our TRV derivations (i.e., this issue is universal as it applies to derivation of NOAELs without LOAELs, or vice versa). Hopefully, the following responses will satisfy Dave's comments dated July 12, 2005 (received via email July 13, 2005):

1. Comment: *The response to comment number 2 from my March 18, 2005 comments states that a LOAEL-to-NOAEL factor of 5 (divide) was applied to derive the NOAEL of 26.3 mg/kg/d for lead. How was this factor of 5 chosen?*

Response: When there is no NOAEL available for either wildlife or laboratory species, but a LOAEL has been determined, Sample et al. (1996)¹ suggest that a

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"NOAEL can be estimated by applying an uncertainty factor (UF) to the LOAEL. In the EPA methodology (EPA 1995), the LOAEL can be reduced by a factor of up to 10 to derive the NOAEL." Wentzel et al. (1996)² suggest using a chronic LOAEL-to-NOAEL UF of 5. Therefore, for the BERA we chose to use a UF of 5 (LOAEL divided by 5) to derive the missing NOAELs when a LOAEL was available (e.g., chromium). The same UF of 5 was used for LOAELs when only NOAELs were available (e.g., Aroclors 1016, 1221, 1232 and 1242). That is, the available NOAEL was multiplied by 5 to derive the LOAEL.

It is acknowledged that the application of a LOAEL-to-NOAEL UF of 5 is less conservative than using a UF of 10, for example. On the other hand, using 5 instead of 10 as a NOAEL-to-LOAEL UF is more conservative. However, in the absence of either NOAELs or LOAELs, the aim was to maintain a consistent UF throughout (i.e., deriving a missing TRV in either direction), instead of varying the UF on a chemical-by-chemical basis. These sources of UF information cited above will be cited in the BERA text and Appendix E test to back up the UF choice used in the food web model.

¹Sample, B.E., D.M. Opresko, and G.W. Suter II. 1996. Toxicological benchmarks for wildlife: 1996 revision. Environmental Restoration Division, ORNL Environmental Restoration Program. ES/ER/TM-86/R3.

²Wentzel, R.S., T.W. LaPoint, M. Simini, R.T. Checkai, D. Ludwig, and L.W. Brewer. 1996.. U.S. Department of the Navy, U.S. Department of the Air Force, and U.S. Department of the Army. June.

2. Comment: *The response to comment number 3 from my March 18, 2005 comments states that a NOAEL-to-LOAEL and LOAEL-to-NOAEL conversion factors 5 were chosen for the BERA. How were these factors chosen?*

Response: See response to comment 1.

3. Comment: *Using the new information provided (Tables 2-7, E-8, and E-10), I attempted to reproduce the maximum HQ (1.11) for the raccoon due to exposure to cadmium presented on Table 2-8 of the BERA. The information was plugged into the equation shown on the fourth page of the revised Appendix E.....Please correct my mistake or double-check these spreadsheets to ensure they are working properly.*

Response: The noted discrepancy can be explained by the application of area use factor (AUF) for raccoon in the Sandy Branch Tributary 2 Habitat (see on Section 2.3.2). Dave's calculation was correct, except that he did not multiply the total dose he derived (57.3 mg/kg-day) by the raccoon AUF of 0.014. The AUF-adjusted dose should be 0.8334 mg/kg-day. When compared to the TRV of 0.75 mg/kg-day, the resulting HQ is 1.11, as presented in the BERA.

Please let us know if there are any more questions or comments, and if these responses satisfy your concerns. Dave should feel free to contact me directly if he has any remaining concerns or comments.

Kind Regards,

Dan Lavoie

Environmental Scientist

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-----Original Message-----

From: George Lane [mailto:George.Lane@ncmail.net]

8/8/2005

Sent: Wednesday, July 13, 2005 7:34 AM
To: rodger.jackson@navy.mil
Cc: Lavoie, Daniel/WDC; Townsend.Gena@epamail.epa.gov; david.lilley@ncmail.net;
sandy.mort@ncmail.net; jstump@GFNET.com; william.corl@navy.mil;
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Jonathon/BOS; Friedmann, William/VBO; Tippin, Katie/VBO; Bird, Robert/WDC
Subject: OUI BERA - Comments to the Navy Responses to USEPA/NCDENR Comments

Good morning Rodger,

Attached you will find Dave Lilley's comments to the RTCs provided to us
on behalf of the Navy by Mr. Daniel Lavoie of CH2MHill. Neither I nor
Sandy Mort have any additional comments on the RTCs provided.

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